

Metaphysics as Pre-Science

Exploring the Questions Science Can't Yet Answer

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Abstract

Metaphysics is a branch of philosophy which explores fundamental questions regarding existence and reality which science often cannot address due to its empirical nature. This essay argues that metaphysics is a “pre-science” which lays the philosophical groundwork for exploring concepts currently beyond scientific reach, such as some aspects of space, time, consciousness, and causality. These metaphysical inquiries bear influence on scientific exploration, with notable figures such as Immanuel Kant and Albert Einstein illustrating connections between metaphysical thought and scientific progress. Having emerged from metaphysical reflections are the nature of the universe and quantum mechanics, two examples of ideas once deemed abstract. As science continues to evolve, many metaphysical concepts may be made more empirically accessible, thereby creating a closer unification between the two fields.

Keywords: metaphysics, pre-science, philosophy, science, empirical evidence, existence, reality, consciousness, causality, time, space, Kant, Einstein, quantum mechanics, hard problem, scientific inquiry, alternate realities, metaphysical reflection, intellectual limitations, scientific discovery, universe

Metaphysics as Pre-Science

As a branch of philosophy which questions the nature of existence, reality, and the fundamental structure of the world, metaphysics plays a singular and necessary role in human thought. The questions that it seeks to answer are often beyond analysis using current scientific methods, unlike those of science which can be proven through empirical observation and experimentation. In exploring the nature of reality, these questions ask what exists, how it exists, and why it exists.

Even though metaphysical questions cannot always be directly tested through experiments and measurements, they often provide understanding of concepts which guide and influence scientific exploration. Based on this fact, this essay argues that metaphysics functions as a “pre-science,” providing philosophical foundations for questions that science is either unequipped to answer due to limitations in our tools and intellect, or because the questions are inherently non-empirical in nature.

The Nature of Metaphysical Inquiry

A commitment to the exploration of the most fundamental aspects of reality rests at the core of metaphysical inquiry. Often abstract and speculative in nature, these are questions for which the answers elude direct observation or scientific testing. To demonstrate the problem inherent in metaphysical questions, science has created ways for us to measure and observe the passage of time. However, it is unable to explain the true nature of time when asked “What is time?” Science is unable to tell us if time is a universal constant, or if it is more flexible and subjective, influenced by forces such as speed or gravity, as proposed by Einstein’s theory of relativity.

Revolutionizing our understanding of space and time, Einstein’s theory of relativity can be viewed as an extension of metaphysical inquiry into the realm of science. Before his introduction of relativity, the popular scientific opinion of time was based in Newtonian mechanics, treating it as a constant and absolute backdrop to events. Philosophers, however, questioned whether time was truly a fixed and unchanging phenomenon, or if it could be understood as something more complex.

It was through his metaphysical reflections on the relationship between space, time, and the speed of light that Einstein's revolutionary work was inspired. These metaphysical reflections led him to understand the interconnected nature of time and space which forms a flexible space-time continuum.

Thus is the nature of metaphysical inquiry, to lay the philosophical groundwork which allows for new scientific paradigms, bridging the gap between abstract thought and empirical discovery. In doing so, metaphysics not only dwells in the realm of the theoretical, but it shapes the questions that science seeks to answer.

The Limitations of Human Intellect

By seeking answers to questions which may lie beyond the current limits of human intellect, metaphysics plays a crucial role in the development of science. Immanuel Kant argued that the human mind is constrained by its sensory capacities. He suggested, in *Critique of Pure Reason*, that we are unable to perceive or understand things as they truly are, but only as they appear to us through the senses which we experience. As such, certain aspects of reality, such as the ultimate nature of love or the existence of God, are beyond human comprehension.

When scientific inquiries deal with concepts which cannot be directly observed or tested, such as multiverses, the limitations of human intellect become particularly evident. The deeply metaphysical concept of multiverses suggests the existence of multiple, perhaps infinite, universes with their own sets of physical laws beyond our own. Some theoretical physicists accept that there may be a multiverse, especially in the context of quantum mechanics and string theory. However, we currently lack the tools for empirical testing of the theory, though physicists have been inspired by the theory to develop mathematical models which might one day offer the empirical evidence necessary to prove the existence of multiverses.

Likewise, the nature of consciousness continues to be a question addressed in metaphysics and not fully explainable by science. Neuroscientists are able to study the neural correlates of consciousness, but they remain unable to definitively explain *what it is like* to be conscious, or how the brain creates personal, subjective experiences. Approaches

in science to closing this gap between the physical and subjective, sometimes referred to as the “hard problem” of consciousness, are continuously being reshaped by metaphysical inquiry into the nature of the mind and its relationship with the body.

While current limitations of human intellect often stand in the way of answers to profound scientific questions, pathways to overcoming these obstacles may be offered through metaphysical inquiry. Such inquiries enable us to explore possibilities which lie beyond the reach of current scientific methods, rendering our limitations into only temporary barriers to advancement. Through the application of metaphysical inquiry, old ideas give way to new ones, encouraging creativity and providing the philosophical groundwork for the future of scientific advancements.

The Non-Empirical Nature of Some Questions

Many metaphysical inquiries are in regards to issues such as ethics, meaning, and existence, precluding them from empirical methods of observation or measurement. On its own, science cannot answer the question of *what constitutes a good life*. Psychology and sociology may help us to better understand human behavior and the choices that we make, but they are unable to define what it is that truly makes a life worth living.

Another example of a metaphysical question with a non-empirical nature is the question of *why* the universe even exists. Science can offer an explanation as to the origins of the universe (e.g., through the Big Bang theory), but answering *why* there is something rather than nothing is too philosophical for science to conclude through empirical means.

Though questions such as these may reach for answers beyond empirical observation or measure, they challenge us to more carefully scrutinize the world around us and our places within it. Such challenges encourage intellectual exploration and foster a more broad understanding of the universe. Because of this, questions of non-empirical nature may very well prove themselves to be valuable to the advancement of science.

Metaphysics and Scientific Discoveries

Scientific inquiry has often been inspired by metaphysical ideas and, in some cases, groundbreaking discoveries have manifested from them. For example, classical physics is based on deterministic laws of motion which are unable to explain the probabilistic and indeterminate behavior of subatomic particles. In the early 20th century, however, metaphysical inquiry led to the formulation of quantum theory from which quantum mechanics was developed. In turn, our understanding of how things work at atomic and subatomic levels was completely revolutionized.

Among early quantum physicists forced to confront questions regarding the nature of observation and reality were Niels Bohn and Werner Heisenberg, who asked if particles exist in definite states before they are observed. The metaphysical questions which they explored eventually led to the development of the famed Heisenberg uncertainty principle. The uncertainty principle, which states that we cannot simultaneously know both the position and momentum of a particle with perfect precision, as well as the concept of wave-particle duality, reflect deep metaphysical questions without which quantum mechanics might not developed in the way that it did.

In another example, the field of cosmology was shaped by metaphysical inquiry into the creation of the universe, God's role in its creation, and the nature of time and space. Influenced by his metaphysical research, Belgian priest and physicist Georges Lemaître proposed the Big Bang theory. His theory of the universe beginning as a singularity before rapidly expanding is now accepted within the scientific community and supported by empirical data.

Conclusion

Providing a philosophical foundation for questions that science is not yet prepared to answer, metaphysics plays an important role in our intellectual history. The many questions which it poses continue to be driving forces behind scientific exploration and inspirations for new hypotheses and theories. Metaphysical inquiries, such as those which explore issues relating to time, causality, and the multiverse, often lay the groundwork for

scientific investigation, pushing the boundaries of human intellect and expanding our understanding of the universe.

Though metaphysics explores concepts which are beyond the reach of empirical observation and testing with the scientific tools and methods currently available, a deeper appreciation of the questions which underlie the scientific process is fostered through its relationship with science. In helping us to rationalize the mysteries of existence that science alone is unable to fully address, metaphysics serves as a pre-science which shapes the future of human knowledge, guiding us toward questions which challenge and inspire scientific inquiry.

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